

REMARKS

Claims 1-11 are pending in this application. Claims 7-8 and 10-11 stand withdrawn as being drawn to a non-elected group. By this Amendment, claim 1 is amended. No new matter is added.

Claims 7 and 8 of non-elected Group II are method claims depending from claims 1-4 of elected Group I. Applicants thus respectfully request that these claims be rejoined and examined with the claims of Group I upon the allowance of claims 1-4.

The Office Action rejects claims 1-4 under 35 U.S.C. 102(e) as being anticipated by Chen et al. (U.S. Patent No. 6,471,936 B1). The Office Action also rejects claims 5, 6 and 9 under 35 U.S.C. 103(a) as being obvious over Danroc et al. (U.S. Patent No. 5,828,162) in view of Chen et al. These rejections are traversed as they may apply to the amended claims.

The present claims require, *inter alia*, graphene sheets (reference number 12) put in layers through catalytic metal particles (reference number 14). As explained in the present specification, "the graphene sheets grow and are laminated with one another while partially embedding, between the graphene sheets, particles 14 of the metal substrate formed during the production steps" (see page 10, lines 16-18).

Chen et al. discloses a "type of carbon nanotubes, the stacked truncated carbon nanocones, [that] are made from CH₄ decomposition over the Ni-, Co- or Fe-based catalyst as previously reported" (see column 4, lines 39-42). Thus, it is Applicants' understanding that the Chen et al. nanocones are simply formed on top of the catalyst substrate. Applicants cannot find any teaching or suggestion in Chen et al. directed to "particles" through which graphene sheets are put in layers, as required by the present

claims. However, in order to expedite prosecution of this application, Applicants have amended claim 1 to make even more clear that the particles are embedded between the graphene sheets.

As the Office Action notes, Danroc et al. "does not disclose the carbon layer comprising a graphite nanofiber having a cylindrical structure in which graphene sheets each having an ice-cream cone-like shape whose tip is cut off are put in layers through catalytic particles; or a structure in which small pieces of graphene sheets having a shape adapted for a surface shape of a catalytic metal particle are put on top of each other in layers through catalytic metal particles" (see the third paragraph on page 4 of the Office Action). Such a graphite nanofiber is required in the present claims. As Applicants believe that such a graphite nanofiber is also not taught or suggested in Chen et al. for at least the reasons discussed above, Applicants thus further submit that Danroc et al. fails to make up for the deficiencies of Chen et al. Therefore, Applicants respectfully submit that the presently claimed invention would not have been obvious over Chen et al. or Danroc et al. alone or in combination of.

For at least the above reasons, reconsideration and withdrawal of the rejections of claims 1-4 under 35 U.S.C. 102(e) and of claims 5, 6 and 9 under 35 U.S.C. 103(a) are respectfully requested.

Applicants respectfully submit that this application is in condition for allowance and such action is earnestly solicited. If the Examiner believes that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone

number listed below to schedule a personal or telephone interview to discuss any remaining issues.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 01-2300, referencing attorney docket number 101136-00029. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300, referencing attorney docket number 101136-00029.

Respectfully submitted,

A handwritten signature in black ink, reading "Robert K. Carpenter". The signature is fluid and cursive, with the first name "Robert" and last name "Carpenter" clearly distinguishable.

Robert K. Carpenter
Registration No. 34,794

Customer No. 004372
ARENT FOX KINTNER PLOTKIN & KAHN, PLLC
1050 Connecticut Avenue, N.W.,
Suite 400
Washington, D.C. 20036-5339
Tel: (202) 857-6000
Fax: (202) 638-4810

RKC/tdd